

**Supplementary Table S1.** Marker-trait association analysis and clinical parameters of the two study groups stratified based on the *FSHR* Asn680Ser (rs6166) genotypes of participants.

Parameter <sup>c</sup>	FSHR Asn680Ser	Baltic male cohort <sup>a</sup>			Estonian oligozoospermic men <sup>b</sup>		
		mean ± SD median (5-95)	P-value beta (SE) <sup>d</sup>		mean ± SD median (5-95)	P-value beta (SE) <sup>d</sup>	
FSH (IU/L)	Asn/Asn	3.0 ± 1.6			7.3 ± 6.1		
		2.6 (1.1 – 5.9)			5.5 (1.9 – 19.9)		
	Asn/Ser	3.2 ± 1.7	0.35		6.7 ± 5.4	0.056	
		2.8 (1.1 – 6.5)	0.06 (0.06)		5.1 (1.7 – 15.7)	0.43 (0.22)	
	Ser/Ser	3.1 ± 1.8			9.3 ± 7.4		
LH (IU/L)	Asn/Asn	3.1 ± 1.8			6.8 (2.3 – 24.9)		
		2.7 (1.3 – 6.3)					
	Asn/Ser	4.1 ± 1.6			4.4 ± 2.1		
		3.8 (1.8 – 6.8)			4.1 (1.7 – 8.3)		
	Ser/Ser	4.0 ± 1.6	0.69		4.2 ± 1.9	0.39	
Inhibin B (pg/mL)	Asn/Asn	3.9 (1.8 – 7.0)	-0.03 (0.07)		3.7 (1.6 – 7.6)	0.09 (0.11)	
		4.0 ± 1.8			4.8 ± 2.4		
	Asn/Ser	3.8 (1.8 – 7.5)			4.3 (2.1 – 8.7)		
					93.6 ± 49.9		
	Ser/Ser	235.0 ± 75.4			93.4 (10.4 – 182.7)		
Total testosterone (nmol/L)	Asn/Asn	227.0 (121.8 – 381.8)			98.4 ± 65.8	<b>0.047</b>	
		224.1 ± 77.2	0.097		81.0 (24.3 – 227.0)	-9.12 (5.04)	
	Asn/Ser	214.0 (111.5 – 361.5)	-5.70 (3.51)		74.9 ± 51.1		
		234.5 ± 88.3			55.3 (10.0 – 175.6)		
	Ser/Ser	222.0 (107.0 – 399.8)					
Estradiol (pmol/L)	Asn/Asn	28.5 ± 8.7			19.1 ± 6.6		
		27.8 (14.9 – 45.2)			18.5 (9.9 – 30.0)		
	Asn/Ser	26.8 ± 9.6	0.059		18.3 ± 6.3	0.33	
		25.5 (14.3 – 44.1)	-0.76 (0.41)		17.6 (10.0 – 30.8)	-0.34 (0.36)	
	Ser/Ser	27.0 ± 8.7			18.4 ± 6.2		
		25.5 (15.2 – 45.3)			17.7 (10.2 – 29.1)		
	Asn/Asn	95.9 ± 26.7			104.0 ± 45.0		
		92.0 (59.0 – 144.2)	0.20		87.0 (73.0 – 178.6)	0.42	
	Asn/Ser	92.7 ± 25.0	-1.37 (1.08)		97.3 ± 32.4	-1.34 (1.70)	
		89.0 (59.0 – 140.5)			85.2 (73.0 – 152.0)		

	Ser/Ser	92.4 ± 21.3 91.0 (55.9 – 132.5)		100.2 ± 31.9 90.6 (73.0 – 168.0)
Total testes volume (mL)	Asn/Asn	50.3 ± 10.5 50.0 (33.0 – 70.0)		41.1 ± 11.8 41.0 (24.0 – 59.1)
	Asn/Ser	48.6 ± 10.2 50.0 (32.3 – 65.0)	<b>0.017</b> -1.13 (0.48)	40.4 ± 9.3 40.0 (24.0 – 56.0)
	Ser/Ser	48.2 ± 10.3 48.0 (31.7 – 70.0)		38.1 ± 9.7 37.0 (22.2 – 54.0)
				4.4 ± 1.9 4.0 (1.8 – 8.0)
Semen volume (mL)	Asn/Asn	3.4 ± 1.6 3.1 (1.3 – 6.4)		4.2 ± 1.8 4.0 (1.5 – 7.7)
	Asn/Ser	3.6 ± 1.6 3.4 (1.3 – 6.5)	0.97 0.00 (0.07)	0.12 -0.15 (0.10)
	Ser/Ser	3.5 ± 1.7 3.4 (1.0 – 6.5)		4.0 ± 1.6 3.8 (1.3 – 7.2)
				7.7 ± 5.6 7.0 (0.1 – 17.0)
Sperm concentration (10 <sup>6</sup> /mL)	Asn/Asn	79.0 ± 65.0 63.0 (7.0 – 206.6)		7.8 ± 6.0 7.0 (0.1 – 18.0)
	Asn/Ser	84.3 ± 82.8 62.6 (9.2 – 224.3)	0.73 0.86 (2.57)	0.71 -0.14 (0.40)
	Ser/Ser	79.3 ± 68.0 63.3 (12.1 – 189.1)		8.1 ± 6.6 7.0 (0.1 – 18.9)
				33.4 ± 29.1 26.4 (0.5 – 90.8)
Total sperm count (10 <sup>6</sup> )	Asn/Asn	262.4 ± 237.7 202.2 (18.2 – 700.0)		34.3 ± 32.3 24.3 (0.3 – 96.8)
	Asn/Ser	287.0 ± 298.2 214.9 (20.2 – 780.0)	0.79 2.28 (8.92)	0.44 -1.16 (1.63)
	Ser/Ser	272.2 ± 285.1 216.7 (23.7 – 686.4)		32.8 ± 32.3 23.1 (0.4 – 96.0)

<sup>a</sup> Baltic young men cohort, n=982; Ser-allele frequency 39.9%, HWE test P=0.95

<sup>b</sup> Estonian oligozoospermic men, n=641; Ser-allele frequency 40.2%, HWE test P=0.93

<sup>c</sup> Data presented as mean ± SD and median (5-95<sup>th</sup> percentile)

<sup>d</sup> *FSHR* 680Ser-allele effect is shown as the estimated linear regression (additive model) statistic β, standard error of the regression (SE) is shown in brackets. Significant associations (*P*<0.05) are given in bold; asterisk (\*) marks *P*-values resistant to Bonferroni correction for multiple testing;